

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (original) An apparatus for routing messages in wireless networks, comprising:
 - 2 a first plurality of filters, each of said plurality of filters adapted to provide a
 - 3 plurality of frequency-based message signals converted from an optically-based signal;
 - 4 a plurality of mixers connected to the first plurality of filters, the mixers adapted
 - 5 to mix the plurality of frequency-based message signals with a plurality of sub-carriers to
 - 6 generate a plurality of frequency-based sub-carrier modulated message signals;
 - 7 a frequency generator connected to the plurality of mixers for providing the
 - 8 plurality of sub-carriers to the mixers;
 - 9 a combiner connected to the mixers for combining the plurality of frequency-
 - 10 based sub-carrier modulated message signals;
 - 11 a second plurality of filters connected to the combiner and adapted to receive and
 - 12 group the plurality of frequency-based sub-carrier modulated message signals;
 - 13 a plurality of optical transmitters, each of said plurality of transmitters connected
 - 14 to one of the second plurality of filters for optically converting and transmitting the
 - 15 frequency-based sub-carrier modulated message signals.
- 1 2. (original) The apparatus of claim 1 wherein the each of the first plurality of filters
- 2 is centered at a pre-defined subcarrier frequency.
- 1 3. (original) The apparatus of claim 2 wherein the plurality of filters are RF filters.
- 1 4. (original) The apparatus of claim 1 wherein the frequency generator generates and
- 2 applies a particular sub-carrier frequency to one of the mixers according to control
- 3 information associated with the frequency-based message signal.

1 5. (original) The apparatus of claim 4 wherein the control information is associated
2 with the frequency-based message signal via a generalized MPLS (GMPLS) label.

1 6. (original) The apparatus of claim 4 wherein the control information is contained
2 in a header portion of the frequency-based message signal.

1 7. (original) The apparatus of claim 1 wherein the second plurality of filters are
2 bandpass filters.

1 8. (original) The apparatus of claim 1 further comprising a receiver device for
2 receiving the optically converted and transmitted sub-carrier modulated message signals
3 and filtering the sub-carrier frequencies from the frequency-based message signals.

1 9. (canceled)

1 10. (currently amended) The method of claim [[9]] 11 wherein the step of converting
2 includes filtering the received signals at predetermined sub-carrier frequencies to recover
3 the frequency-based message signals contained therein.

1 11. (currently amended) The method of claim 9 Method for routing messages in
2 wireless networks comprising the steps of:

3 optically receiving one or more composite optical signals;

4 converting said one or more composite optical signals into a plurality of
5 frequency-based message signals;

6 mixing each of the plurality of frequency-based message signals with a
7 corresponding sub-carrier to generate a plurality of sub-carrier modulated frequency-
8 based signals;

9 combining and grouping said plurality of sub-carrier modulated frequency-based
10 signals; and

11 optically converting and transmitting each group of said plurality of sub-carrier
12 modulated frequency-based signals;

13 wherein the step of mixing includes interpreting control information associated
14 with the frequency-based message signal to determine the appropriate sub-carrier for
15 mixing.

1 12. (original) The method of claim 11 wherein the control information is contained
2 within a generalized MPLS label of the frequency-based message signal.

1 13. (original) The method of claim 11 wherein the control information is contained
2 within a header of the frequency-based message signal and assigns a sub-carrier
3 frequency thereto.